

WHAT IS CLAIMED IS:

1. A lens apparatus interchangeably mounted on a plurality of image pickup apparatuses having different forms of image pickup devices, comprising:

5 an image pickup optical unit;

a light quantity adjustment unit inserted in an optical axis of said image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

10 a controller for controlling a change of the aperture diameter by said light quantity adjustment unit,

wherein said controller changes a set value of said light quantity adjustment unit for a minimum aperture diameter of the aperture diameter in accordance with the form of the image pickup device of the image pickup apparatus on which the lens apparatus is mounted.

20 2. An apparatus according to claim 1, wherein the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

25 3. An apparatus according to claim 1, wherein the form of the image pickup device includes at least one information out of the number of pixels of the image

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pickup device, a pixel pitch of each pixel, and an aperture value set in accordance with the pixel pitch.

4. An optical apparatus including at least any
5 one of a plurality of image pickup apparatuses having different forms of image pickup devices, and a lens apparatus interchangeably mounted on the one image pickup apparatus, the one image pickup apparatus and the lens apparatus having contacts for performing
10 transmission between the one image pickup apparatus and the lens apparatus, the optical apparatus comprising:

an image pickup optical unit which is included in the lens apparatus;

a light quantity adjustment unit inserted in an
15 optical path of the image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

a controller for controlling a change of the aperture diameter by said light quantity adjustment
20 unit, said controller obtaining information concerning the form of the image pickup device from the image pickup apparatus by transmission via the contacts,

wherein said controller changes a set value of said light quantity adjustment unit for a minimum
25 aperture diameter of the aperture diameter in accordance with the information concerning the form of the image pickup device of the image pickup apparatus

that is obtained by the transmission.

5. An apparatus according to claim 4, wherein the information concerning the form of the image pickup
5 device includes information concerning a pixel pitch of each pixel of the image pickup device.

6. An apparatus according to claim 4, wherein the information concerning the form of the image pickup
10 device includes at least one information out of the number of pixels of the image pickup device, a pixel pitch of each pixel, and an aperture value set in accordance with the pixel pitch.

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15 7. An optical apparatus including any one of a plurality of image pickup units which include image pickup devices and have different forms of the image pickup devices, and a main body unit which includes an image pickup optical unit on which the one image pickup
20 unit is mounted to form an image on the image pickup device, and a memory part for storing an image pickup signal from the image pickup unit, the one image pickup unit and the main body unit having contacts for performing transmission between the one image pickup
25 unit and the main body unit, the optical apparatus comprising:

a light quantity adjustment unit inserted in an

optical axis of the image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

5 a controller for controlling a change of the aperture diameter by said light quantity adjustment unit, said controller obtaining information concerning the form of the image pickup device from the image pickup unit by transmission via the contacts,

10 wherein said controller changes a set value of said light quantity adjustment unit for a minimum aperture diameter of the aperture diameter in accordance with the information concerning the form of the image pickup device of the image pickup unit that is obtained by the transmission.

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8. An apparatus according to claim 7, wherein the information concerning the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

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9. An apparatus according to claim 7, wherein the information concerning the form of the image pickup device includes at least one information out of the number of pixels of the image pickup device, a pixel pitch of each pixel, and an aperture value set in
25 accordance with the pixel pitch.

10. A lens apparatus interchangeably mounted on a plurality of image pickup apparatuses which have different forms of image pickup devices and a plurality of image pickup modes, comprising:

5 an image pickup optical unit;

 a light quantity adjustment unit inserted in an optical axis of said image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

10 a controller for controlling a change of the aperture diameter by said light quantity adjustment unit,

 wherein said controller changes a set value of said light quantity adjustment unit for a minimum
15 aperture diameter of the aperture diameter in accordance with the form of the image pickup device in a preset image pickup mode out of the plurality of image pickup modes of the image pickup apparatus on which the lens apparatus is mounted.

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11. An apparatus according to claim 10, wherein the preset image pickup mode includes an automatic exposure adjustment image pickup mode.

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12. An apparatus according to claim 10, wherein information concerning the form of the image pickup device includes information concerning a pixel pitch of

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each pixel of the image pickup device.

13. An apparatus according to claim 10, wherein
information concerning the form of the image pickup
5 device includes at least one information out of the
number of pixels of the image pickup device, a pixel
pitch of each pixel, and an aperture value set in
accordance with the pixel pitch.

10 14. A lens apparatus interchangeably mounted on a
plurality of image pickup apparatuses which have
different forms of image pickup devices and a plurality
of image pickup modes, comprising:

an image pickup optical unit;

15 a light quantity adjustment unit inserted in an
optical axis of said image pickup optical unit, said
light quantity adjustment unit changing an aperture
diameter to change a light quantity; and

a controller for controlling a change of the
20 aperture diameter by said light quantity adjustment
unit,

wherein said controller changes a set value of
said light quantity adjustment unit for a minimum
aperture diameter of the aperture diameter in
25 accordance with the form of the image pickup device of
the image pickup apparatus on which the lens apparatus
is mounted, and

5 said controller inhibits setting an aperture value of which an aperture diameter becomes smaller than the changed set value of the minimum aperture diameter in an aperture priority image pickup mode out of the plurality of image pickup modes of the image pickup apparatus.

10 15. An apparatus according to claim 14, wherein the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

15 16. An apparatus according to claim 14, wherein the form of the image pickup device includes at least one information out of the number of pixels of the image pickup device, a pixel pitch of each pixel, and an aperture value set in accordance with the pixel pitch.

20 17. A lens apparatus interchangeably mounted on a plurality of image pickup apparatuses which have different forms of image pickup devices and a plurality of image pickup modes, comprising:

25 an image pickup optical unit;
a light quantity adjustment unit inserted in an optical axis of said image pickup optical unit, said light quantity adjustment unit changing an aperture

image pickup device, a pixel pitch of each pixel, and an aperture value set in accordance with the pixel pitch.

5 20. An optical apparatus including at least any one of a plurality of image pickup apparatuses which have different forms of image pickup devices and a plurality of image pickup modes, and a lens apparatus interchangeably mounted on the one image pickup
10 apparatus, the one image pickup apparatus and the lens apparatus having contacts for performing transmission between the one image pickup apparatus and the lens apparatus, the optical apparatus comprising:

15 an image pickup optical unit which is included in the lens apparatus;

 a light quantity adjustment unit inserted in an optical path of the image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

20 a controller for controlling a change of the aperture diameter by said light quantity adjustment unit, said controller obtaining information concerning the form of the image pickup device and information concerning the image pickup mode from the image pickup
25 apparatus by transmission via the contacts,

 wherein said controller changes a set value of said light quantity adjustment unit for a minimum

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aperture diameter of the aperture diameter in
accordance with the information concerning the form of
the image pickup device of the image pickup apparatus
that is obtained by the transmission when the
5 information concerning the image pickup mode obtained
by the transmission represents a preset image pickup
mode out of the plurality of image pickup modes.

21. An apparatus according to claim 20, wherein
10 the preset image pickup mode includes an automatic
exposure adjustment image pickup mode.

22. An apparatus according to claim 20, wherein
the information concerning the form of the image pickup
15 device includes information concerning a pixel pitch of
each pixel of the image pickup device.

23. An apparatus according to claim 20, wherein
the information concerning the form of the image pickup
20 device includes at least one information out of the
number of pixels of the image pickup device, a pixel
pitch of each pixel, and an aperture value set in
accordance with the pixel pitch.

24. An optical apparatus including any one of a
25 plurality of image pickup units which include image
pickup devices and have different forms of the image

pickup devices, and a main body unit which has a plurality of image pickup modes and includes an image pickup optical unit on which the one image pickup unit is mounted to form an image on the image pickup device, and a memory part for storing an image pickup signal from the image pickup unit, the one image pickup unit and the main body unit having contacts for performing transmission between the one image pickup unit and the main body unit, the optical apparatus comprising:

a light quantity adjustment unit inserted in an optical axis of the image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

a controller for controlling a change of the aperture diameter by said light quantity adjustment unit, said controller obtaining information concerning the form of the image pickup device and information concerning the image pickup mode from the image pickup unit by transmission via the contacts,

wherein said controller changes a set value of said light quantity adjustment unit for a minimum aperture diameter of the aperture diameter in accordance with the information concerning the form of the image pickup device of the image pickup unit that is obtained by the transmission when the information concerning the image pickup mode obtained by the transmission represents a preset image pickup mode out

of the plurality of image pickup modes.

25. An apparatus according to claim 24, wherein
the preset image pickup mode includes an automatic
5 exposure adjustment image pickup mode.

26. An apparatus according to claim 24, wherein the information concerning the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

27. An apparatus according to claim 24, wherein the information concerning the form of the image pickup device includes at least one information out of the number of pixels of the image pickup device, a pixel pitch of each pixel, and an aperture value set in accordance with the pixel pitch.

28. An optical apparatus including at least any
20 one of a plurality of image pickup apparatuses which
have different forms of image pickup devices and a
plurality of image pickup modes, and a lens apparatus
interchangeably mounted on the one image pickup
apparatus, the one image pickup apparatus and the lens
25 apparatus having contacts for performing transmission
between the one image pickup apparatus and the lens
apparatus, the optical apparatus comprising:

an image pickup optical unit which is included in the lens apparatus;

5 a light quantity adjustment unit inserted in an optical path of the image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

10 a controller for controlling a change of the aperture diameter by said light quantity adjustment unit, said controller obtaining information concerning the form of the image pickup device and information concerning the image pickup mode from the image pickup apparatus by transmission via the contacts,

15 wherein said controller changes a set value of said light quantity adjustment unit for a minimum aperture diameter of the aperture diameter in accordance with the information concerning the form of the image pickup device of the image pickup apparatus that is obtained by the transmission, and

20 said controller inhibits setting an aperture value of which an aperture diameter becomes smaller than the changed set value of the minimum aperture diameter when the image pickup mode obtained by the transmission is an aperture priority image pickup mode out of the plurality of image pickup modes of the image pickup
25 apparatus.

29. An apparatus according to claim 28, wherein

the information concerning the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

5 30. An apparatus according to claim 28, wherein
the information concerning the form of the image pickup
device includes at least one information out of the
number of pixels of the image pickup device, a pixel
pitch of each pixel, and an aperture value set in
10 accordance with the pixel pitch.

31. An optical apparatus including at least any
one of a plurality of image pickup apparatuses which
have different forms of image pickup devices and a
15 plurality of image pickup modes, and a lens apparatus
interchangeably mounted on the one image pickup
apparatus, the one image pickup apparatus and the lens
apparatus having contacts for performing transmission
between the one image pickup apparatus and the lens
20 apparatus, the optical apparatus comprising:

an image pickup optical unit which is included in
the lens apparatus;

a light quantity adjustment unit inserted in an
optical path of the image pickup optical unit, said
25 light quantity adjustment unit changing an aperture
diameter to change a light quantity; and

a controller for controlling a change of the

aperture diameter by said light quantity adjustment unit, said controller obtaining information concerning the form of the image pickup device and information concerning the image pickup mode from the image pickup apparatus by transmission via the contacts,

wherein said controller changes a set value for a minimum aperture diameter of the aperture diameter by said light quantity adjustment unit in accordance with the information concerning the form of the image pickup device of the image pickup apparatus that is obtained by the transmission, and

said controller transmits information representing a warning to the image pickup apparatus via the contacts when the image pickup mode obtained by the transmission is an image pickup mode of arbitrarily changing an aperture value or shutter speed, and when the aperture value or shutter speed with which an aperture diameter becomes smaller than the changed set value of the minimum aperture diameter is set.

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32. An apparatus according to claim 31, wherein the image pickup apparatus includes a display, and causes the display to display a warning message when receiving the information representing the warning from the lens apparatus.

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33. An apparatus according to claim 31, wherein

the information concerning the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

5 34. An apparatus according to claim 31, wherein
the information concerning the form of the image pickup
device includes at least one information out of the
number of pixels of the image pickup device, a pixel
pitch of each pixel, and an aperture value set in
10 accordance with the pixel pitch.

 35. An optical apparatus including any one of a
plurality of image pickup units which include image
pickup devices and have different forms of the image
15 pickup devices, and a main body unit which has a
plurality of image pickup modes and includes an image
pickup optical unit on which the one image pickup unit
is mounted to form an image on the image pickup device,
and a memory part for storing an image pickup signal
20 from the image pickup unit, the one image pickup unit
and the main body unit having contacts for performing
transmission between the one image pickup unit and the
main body unit, the optical apparatus comprising:

 a light quantity adjustment unit inserted in an
25 optical axis of the image pickup optical unit, said
light quantity adjustment unit changing an aperture
diameter to change a light quantity; and

a controller for controlling a change of the aperture diameter by said light quantity adjustment unit, said controller obtaining information concerning the form of the image pickup device and information
5 concerning the image pickup mode from the image pickup unit by transmission via the contacts,

wherein said controller changes a set value of said light quantity adjustment unit for a minimum aperture diameter of the aperture diameter in
10 accordance with the information concerning the form of the image pickup device of the image pickup unit that is obtained by the transmission, and

said controller inhibits setting an aperture value of which an aperture diameter becomes smaller than the
15 changed set value of the minimum aperture diameter when the image pickup mode obtained by the transmission is an aperture priority image pickup mode out of the plurality of image pickup modes.

20 36. An apparatus according to claim 35, wherein the information concerning the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

25 37. An apparatus according to claim 35, wherein the information concerning the form of the image pickup device includes at least one information out of the

number of pixels of the image pickup device, a pixel pitch of each pixel, and an aperture value set in accordance with the pixel pitch.

5 38. An optical apparatus including any one of a plurality of image pickup units which include image pickup devices and have different forms of the image pickup devices, and a main body unit which has a plurality of image pickup modes and includes an image pickup optical unit on which the one image pickup unit is mounted to form an image on the image pickup device, and a memory part for storing an image pickup signal from the image pickup unit, the one image pickup unit and the main body unit having contacts for performing transmission between the one image pickup unit and the main body unit, the optical apparatus comprising:

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 a light quantity adjustment unit inserted in an optical axis of the image pickup optical unit, said light quantity adjustment unit changing an aperture diameter to change a light quantity; and

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 a controller for controlling a change of the aperture diameter by said light quantity adjustment unit, said controller obtaining information concerning the form of the image pickup device and information concerning the image pickup mode from the image pickup unit by transmission via the contacts,

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 wherein said controller changes a set value of

said light quantity adjustment unit for a minimum aperture diameter of the aperture diameter in accordance with the information concerning the form of the image pickup device of the image pickup unit that is obtained by the transmission, and

said controller transmits information representing a warning to the image pickup apparatus via the contacts when the image pickup mode obtained by the transmission is an image pickup mode of arbitrarily changing an aperture value or shutter speed, and when the aperture value or shutter speed with which an aperture diameter becomes smaller than the changed set value of the minimum aperture diameter is set.

39. An apparatus according to claim 38, wherein the image pickup apparatus includes a display, and causes the display to display a warning message when receiving the information representing the warning from the lens apparatus.

40. An apparatus according to claim 38, wherein the information concerning the form of the image pickup device includes information concerning a pixel pitch of each pixel of the image pickup device.

41. An apparatus according to claim 38, wherein the information concerning the form of the image pickup

